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ABSTRACT

Examined were the knowledge of deafness of 146 occupational educators involved in mainstream instruction of the deaf and the attitudes toward the deaf of 137 educators and 68 hearing students at occupational training centers. Results of the Knowledge of Deafness Test suggested a relative deficiency in background knowledge about characteristics of deaf mainstreamed students. Results of the Attributes of Deafness Inventory produced three conclusions: on the average attitudes of educators and hearing students were more favorable than unfavorable; administrators, pupil personnel staff, teachers, and hearing peers differed in the degree of favorableness expressed toward the deaf; and substantial numbers of teachers and hearing students expressed uncomplimentary attitudes toward the deaf. Findings had implications for ways to induce greater support for mainstreaming efforts. (CL)

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MAINSTREAMING THE DEAF IN OCCUPATIONAL EDUCATION: KNOWLEDGE AND ATTITUDES IN THE SCHOOL ENVIRONMENT

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INTRODUCTION

There can be little doubt that widespread skepticism, anxiety, and ambivalence exist regarding the wisdom and practicability of the movement to mainstream severely handicapped students in regular classrooms. The problems of attempting to regularize the school experience of large numbers of disabled pupils are undoubtedly numerous, complex, and severe. And because of our inexperience with such efforts, these problems are also unfamiliar ones. Some of the difficulties anticipated, therefore, may be more imagined than real and may never materialize; others may be easier or more difficult to contend with than expected; and some totally unforeseen problems will arise. As a consequence, many proposed solutions, however well reasoned, are only untested hypotheses about adaptation in matters pertaining to personnel qualifications, facilities, instructional programs, and support services. Important as such considerations are, however, they are preceded by and embedded in a milieu that will pervasively influence the mainstreaming process. Such situational factors certainly include

(1) familiarity with the nature and impact of handicapping conditions that greets the disabled in the mainstream environment.

(2) prevailing attitudes toward disability itself, and

(3) attitudes toward associating with the disabled, both generally and in the school environment.

This report is the result of a preliminary inquiry into some aspects of these cognitive and affective conditions as they relate to mainstreaming deaf students in secondary level occupational education programs. This study has been a major part of a comprehensive survey* of the cooperative

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mainstreaming arrangements, negotiated between schools for the deaf and neighboring regional Occupational Education Centers of the Board of Cooperative Educational Services (BOCES) in New York State.

The four programs involved are local variations on a state supported model for partial mainstreaming. Students, in all four instances, are enrolled both in schools for the deaf (the home school) and, along with hearing students, in regular occupational courses of study. All students enrolled in these occupational programs divide their school day equally between courses at the regional center and academic coursework in their home school. Generally, courses of study enroll high school juniors and seniors and require two academic years to complete.

Under optimum conditions total integration of handicapped youngsters may represent the mainstreaming ideal. However, in the authors' view, it is more realistic and fruitful to consider mainstreaming not as a dichotomous, static feature of the child's experience, but as a process of accommodation and adaptation that varies by degree. In other words it seems ill-advised to treat mainstreaming and special placement as mutually exclusive alternatives. Total integration into all aspects of the regular school environment and total separation represent only the extremes in a potentially limitless variety of combinations of regular and special education programs.

This study had two general objectives. The first was to assess the familiarity of occupational educators, engaged in the mainstream instruction of the deaf, with the disability of deafness itself and with the characteristics of deaf people. The second purpose was to investigate attitudes of both educators and hearing students at the occupational training centers toward the deaf in general and toward their participation in regular course offerings at

the Centers. Data on both objectives were collected during the fall semesters of two successive school years (1976-77 and 1977-78).

KNOWLEDGE OF DEAFNESS

In 1976 a Knowledge of Deafness Test (KDT) was administered to the entire population of BOCES administrators, pupil personnel staff, and instructors (N = 146) who shared, in some way, direct responsibility for integrating 84 deaf students into the regular instructional programs of the four occupational training centers. The KDT was also administered to a sample of 98 deaf educators at the four cooperating schools for the deaf, in order to obtain comparison data inidcative of knowledge and information levels among educators with training and experience in the field of deafness. In the fall of 1977 the test was readministered to 50% random samples (70 occupational educators and 41 deaf educators) of 1976 respondents who were available for testing in 1977. The purpose of this follow-up was primarily to assess the stability over time of individual and group performances. The Knowledge of Deafness Test is a multiple choice test, containing items adapted for this project from two other instruments, the General Information and Knowledge Test (Weatherman and Johnson, 1972) and The Impact of Deafness Test (Avery). Item content is topically diverse and designed to extend over a wide range of item difficulty. Subject matter covered by the test includes such areas as demographic features of the deaf population, etiology of deafness, educational experience and achievement of the deaf, language development, communication and sign language. The 1976 version contained 32 items. One item was dropped from the 1977 version because it was found in the analysis of 1976 item data to have a negative discrimination index.

The purpose of this instrument is not to assess the technical competence one would expect to find in the repertoire of the specialist in deaf education.

It is designed, rather, to survey both the breadth and level of background data about deafness and deaf people that an interested observer might acquire (1) through experiential contact with the deaf, (2) through alertness to spontaneously encountered sources of information (e.g., public media), and (3) through professional association with specialists in the field. It is the kind of information readily available to specialists, but not the unique stock-in-trade of any particular specialty within deaf education. Interest in the extent of such knowledge among occupational educators responsible for mainstreaming deaf students was prompted by two assumptions:

(1) That such knowledge contributes, at least partially, to a sense of unity and to community of purpose among those engaged in providing educational services to the deaf;

(2) And that such knowledge provides a useful basis for appreciating learning difficulties experienced by the deaf, for understanding behavioral concomitants of deafness, and for alleviating apprehension that might otherwise accompany contacts with deaf persons.

In order to establish the content validity of the KDT as a measure of general background knowledge, it was submitted for review to staff members[1] of the Office of Professional Development, National Technical Institute for the Deaf (NTID), at the Rochester Institute of Technology, Rochester, New York.[2]

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[1]Mr. Joseph Avery, Mr. Paul Menkiss, Dr. Kenneth Nash, and Ms. Kathy Warren, whose assistance in this regard is greatly appreciated.

[2]The National Technical Institute for the Deaf is one of two institutions of higher education in the U. S. devoted exclusively to the college education of the deaf and to related research. It is supported by Congressional appropriation and is operated under the auspices of the Rochester Institute of Technology under contract to the federal government.

They are responsible for providing a general orientation to deafness for new-staff members who have no previous professional training or experience in deaf education. The test administered in this study was a version of the KDT revised according to recommendations of the NTID new-staff trainers.

Item analyses performed on KDT data in both years produced generally encouraging results. Item difficulties (.08 to .89 in 1976; .10 to .98 in 1977) indicate accomplishment of the objective to produce a wide range test. Moreover, average item difficulties in both years (.58 in 1976 and .60 in 1977) were only slightly below the optimal average difficulty of .64 for a four option, 32-item multiple choice test. Item descrimination indices, with the exception of a single item in each year, were positive, and, with very few exceptions, encouragingingly large. Split-half reliabilities in 1976 and 1977 were .67 and .64 respectively. While these values are not very large, it must be remembered that the test intentionally covers a very wide range of topical content. For a nonhomogeneous instrument observed split-half reliabilities are quite reasonable. More informative is the stability coefficient (.77) based on the performance of those tested in both years. Considering the length of the test-retest interval, evidence for the adequacy of reliability is, in the authors' view, quite satisfactory.

Table I reports by type of school (BOCES Centers and schools for the deaf) and by job classification (administrators, pupil personnel services staff, instructors) the KDT means, standard deviations, and number of subjects tested in fall, 1976. Table II reports the same data for the fall, 1977,

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Insert Tables I and II about here

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retest sample. Tests of statistical significance among observed means were not conducted, since observed values are parameters (free of sampling error) for the various subject populations, pooled within job classification over schools for the deaf and over BOCES Centers.

The most notable feature of the differences observed among groups tested is the magnitude of the differences between BOCES staff and staff affiliated with the schools for the deaf. As expected, the superiority of performance by professional staff at the schools for the deaf (relative to observed variance in the score distributions) was substantial, both generally and within each personnel category. Within either type of school, differences among personnel categories were relatively small. It is interesting to note, however, that at the schools for the deaf, group differences on the KDT are consistent with group differences in opportunity (i.e., breadth and length of professional experience) for familiarization with the characteristics of the deaf population. Among the BOCES groups, on the other hand, performance by pupil personnel services staff exceeds that of both administrators and instructors. Included among this group, however, are BOCES employees experienced in the field of deaf education. They are employed for the specific purpose of coordinating relations between cooperating schools in matters pertaining to mainstreaming deaf students. When these coordinators' scores (N = 4; KDT mean = 23.78) are removed from the score distribution, the KDT mean of the remaining BOCES pupil personnel staff is diminished (N = 14; KDT mean = 17.07). Note, also, that BOCES instructors may be divided into two subgroups, teachers who had deaf students enrolled in their courses at the time of testing and those who did not. The mean for teachers actively engaged in occupational instruction of deaf students is also negligibly different from the other

BOCES staff groups. In other words, BOCES personnel do not exhibit the variability in performance observed among different types of deaf educators. And their performance as a whole is substantially below that of deaf educators taken all together. This suggests a relative deficiency among BOCES staff, independent of employment classification, in professionally advantageous background knowledge about characteristics of their mainstreamed students. Although the kind of knowledge in question is the sort that one ordinarily acquires unsystematically through casual encounter with informed sources, it is information upon which understanding and a sense of confidence in interpersonal contacts with such students may be based. It is also the kind of knowledge which can be easily organized, communicated, and acquired through formal instruction. In the authors' opinion, it is apt subject matter for a very useful part of systematic in-service training experiences for regular classroom teachers that may ultimately contribute substantially to the success of mainstreaming handicapped children. We are inclined also to suspect that these findings regarding knowledge of disability are not uniquely a function of mainstreaming the deaf. We think it more than likely that a similar absence of familiarity with characteristic features of other handicapping conditions would also be found to prevail generally. Considering the fact that the mainstreaming programs we have studied are already well established and carefully organized, but lacking in systematic, on-going in-service training opportunities, it would appear that the spontaneous acquisition of such knowledge is a rather lengthy and uncertain process. We feel, therefore, that a serious need exists for more systematic programs of in-service preparation of educators to

assume and fulfill mainstreaming responsibilities. And we feel that information about the nature, correlates, and impact of handicapping conditions in general and about a variety of commonly encountered specific disabilities is central to in-service programs.

ATTITUDES TOWARD THE DEAF

Attitudes of those with whom the handicapped are associated in the mainstreaming environment were also investigated in this study. In the fall of 1976 an instrument entitled the Attributes of Deafness Inventory (ADI) was administered to the same population of BOCES administrators, pupil personnel services staff (PPS), and instructors who took the KDT (N = 137). In addition it was administered to a group of hearing classmates (N = 68) of deaf students. They were matched as closely as possible to the deaf students on sex, course of study, length of attendance at BOCES, and anticipated year of graduation. It should be noted that in the absence of randomization, these hearing students are not a representative sample of the hearing population at BOCES; nor were they intended to be. Instead, systematic efforts were made to select close associates of the deaf, because the peer relationship of the deaf and hearing students was deemed critical. The investigators were concerned with the attitudes of hearing students whose classroom experience involved most directly the participation of deaf students. Use of statistical inference to evaluate comparisons between deaf and hearing students was not planned. Nor was generalization of findings to the occupational education population at large intended. Comparisons of interest to the investigators were quite specific, i.e., attitudinal differences among precisely those groups having contact with or responsibility for the deaf population at BOCES.

In 1977, the same instrument was administered again to BOCES staff, (N = 169) and hearing students (N = 34). The purpose on this occasion was to test the replicability of the first year's findings and to evaluate the stability of ADI performance for those respondents tested in both years.

The sizes of groups tested in 1977 differ from those tested in 1976 for several reasons. One school for the deaf reorganized its high school program, extending it from four to five years with a one-year moratorium on new admissions to BOCES. This reduced both the total number of mainstreamed deaf students and the number of occupational education instructors teaching the deaf in 1977-1978. In 1977 the opportunity presented itself to test a larger number of teachers who were not currently engaged in teaching deaf students. And finally, adverse weather conditions prevented planned administration of the ADI to hearing students and school administrators at one of the occupational centers in time for inclusion in this report.

Also in the second year, a new section (an experimental version of a social distance scale) was appended to the ADI and administered to all respondents. Because the social distance scale is still under development and requires more extensive evaluation, this report focuses primarily on the original version of the ADI. The social distance scale's results are dealt with in less detail.

The 1976 version of the Attributes of Deafness Inventory (ADI) was a 36-item instrument containing statements representing stereotypic concepts attributable to deafness and deaf persons. Respondents were required to indicate their reaction to each statement on a four-point bipolar scale (A = strongly agree, a = mildly agree, d = mildly disagree, D = strongly disagree). Items included both favorable and unfavorable

statements, and responses were assigned values from 1 (strongly positive or favorable) to 4 (strongly negative or unfavorable).

The original ADI is composed of two separate subscales. The first 25 items (Scale I) were adapted from the Attitudes to Deafness Scale (Cowen et al., 1967), by permission of the principal author. Scale I leaves item content of the original instrument substantially intact. Item revision was limited to adjusting for reading skills expected of the hearing student group. The content of the items is dominated by stereotypic generalizations regarding both social skills and socially relevant manifestations of personality development and personal adjustment. The second subscale (Scale II) includes 11 items, similar in orientation to Scale I, but specifically focused on the occupational education environment and employment-related situations. The two subscales are scored separately in accordance with the procedure described above, yielding a separate score for each scale. The social distance scale appended to the ADI in 1977 includes 24 items describing social interactions with deaf persons. The respondent was required to make a dichotomous judgment indicating whether he/she would feel more comfortable or more uncomfortable in the situation described. The 24 items actually comprise a pair of 12-item social distance scales on which items are ordered hierarchically according to the level of social intimacy reflected in their content (cf. Appendix A).

Table III reports by year (1976 and 1977) the means, standard deviations, and size of groups on Scale I for BOCES staff groups and students. Table IV provides the same information for Scale II. Note that in both

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Insert Tables III and IV about here

Tables III and Table IV teachers are divided into groups--those teaching deaf students at the time of testing (participants) and those who had taught deaf students in previous years (nonparticipants). Inspection of the results indicates that, on the average, all groups exhibit moderately favorable attitudes toward the deaf on both subscales, falling roughly between the midpoint of the moderately favorable interval and its lower (more favorable) boundary.* On both scales in both years administrators and PPS staff displayed, on the average, more positive attitudes toward the deaf than either the hearing students or instructors. And in both years instructors were more favorably disposed toward the deaf on Scale I than hearing students. The results on the social distance scales administered with the ADI in 1977 were ordered in the same manner from most "accepting" to least "accepting": administrators and PPS staff, teachers, hearing classmates.

Relative to the range of possible scores on both ADI scales and the social distance scales, raw-score differences among group means do not appear large. Relative to variability (i.e., standard deviations) within groups, however, observed mean differences take on a more interesting appearance. Within-groups variability is sufficiently small, relative to variation among groups, that measurement error alone is a highly improbable source of observed mean differences. Further evidence for this conclusion

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*For Scale I (the 25 Cowen items) score intervals are 25-37.5 = strongly favorable, 37.6-62.5 = moderately favorable, 62.6-87.5 = moderately unfavorable, 87.6-100 = strongly unfavorable. For Scale II (11 BOCES-oriented itmes) score intervals corresponding to the same attitudinal categories are 11-16.5, 16.6-27.5, 27.6-38.5, and 38.6-44 respectively.

is given by the rank difference correlation coefficients between the distributions of group means on Scales I and II and on the pair of social distance scales.

These correlations (cf. Table V) reflect the relative consistency, across scales and over time, of group means for administrators, PPS staff, current instructors of the deaf, past instructors of the deaf, and hearing students associated with the deaf at BOCES. The extent to which the

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Insert Table V about here

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rank-order of group means was preserved between scales and occasions suggests, in spite of the narrow range of observed differences, that these groups do systematically differ by degree in the favorableness of their disposition toward the deaf.

In addition to correlation associated with between-groups variation, correlation associated with individual differences, among occupational education staff independent of specific job classifications, was also examined. Table VI reports Pearson product-moment correlations for ADI Scales I and II in the years 1976 and 1977, and for the two social distance scales administered in 1977. Student data were not included in

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Insert Table VI about here

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these computations because the membership of the hearing-student samples was not constant over the two-year period, and because the extremeness of student scores on Scale I could spuriously suggest the existence of stronger relationships than actually exist within staff groups. These correlations indicate that the ADI is considerably less powerful in its

ability to differentiate among individuals generally than among groups in the occupational centers. Nonetheless, the correlations are sufficiently large to suggest the relative stability of views measured by each scale and moderate association between scales.

The question, of course, arises whether group differences as small as those observed, however dependable, are worthy of attention and interest. The answer to this question, the authors believe, is associated in part with difficulties that surround the interpretation of global measures of attitude in general, and especially of attitudes toward deviance from normality. Long and frustrating experience has taught investigators, if nothing else, to expect to elicit little (if any) conscious and explicit negativism in attitudes expressed toward any disadvantaged group. It has been suggested that social desirability may be a potent factor influencing response to items expressly designed to assess attitudes toward the handicapped.

Several studies of attitudes toward the deaf have already evidenced a common tendency for the deaf to be evaluated in mildly positive terms (Schroedel & Schief, 1972; Emerton & Rothman, 1975). Whether this represents genuinely favorable feelings is difficult to affirm or deny. That it might result, in part, from normative sanctions against expressing ill-will toward victims of misfortune is both possible and probable. This suggests, unfortunately, the probable futility of attempting, through questionnaires or rating scales, to obtain unambiguous absolute measures of attitude toward exceptional persons. However, it does not preclude developing measures sensitive to relative differences in attitude, in spite of danger from the confounding effect of response bias. Assessing differences among groups does not require removal of response bias from such self-report data, as would be necessary to assess feeling levels as such.

To detect the existence of reliable attitudinal differences among groups it is sufficient for the confounding effect of prospective bias to remain roughly constant over the groups, so long as it does not also overpower and mask differences from analytical view.

The very discovery of notable variation among groups eliminates masking as an explanation of findings, since masking effects would (by definition) serve to diminish the emergence of observed differences. The question of the constancy of biasing effects, however, is more problematic. Direct empirical evidence for the neutrality of influences like social desirability is very difficult to adduce. It might be argued, for example, that observed differences are due to the differential impact of response bias, meaning that one might be measuring the response bias itself, rather than the targeted attitudes. In this regard, however, the authors find two arguments both powerful and attractive.

The first argument is admittedly hypothetical but, we also feel, cogent. We live in a society that enforces emphatic normative sanctions against public expression of negative feeling toward others (especially disadvantaged others). Such sanctions are imposed even on the very young and remain in force throughout life. This strengthens the likelihood that by adolescence, if not before, a youth is as fully socialized in this respect as adult members of society--and no less inclined to produce the socially acceptable response.

The second reason is more compelling. It is based on the deductive argument that response bias reflecting common societal norms cannot spuriously create the appearance of attitudinal differences. By definition, such norms exist to inhibit socially deviant response. Consequently the bias would tend, if operative, to repress rather than promote the appearance of attitudinal variation. When and if, therefore, group differences in expressed

attitude <u>are</u> found they must be attributed

(1) directly to the existence of such differences;

(2) or indirectly to the failure of the presumed bias to prevent the emergence of differences.

Since the magnitude of response bias' effects, if present at all, is unknown, observed differences would be most properly interpreted as distinguishing groups hierarchically on an ordinal scale of expressed attitude. The limitations imposed by these considerations obviously necessitate caution in attempts to measure attitude and to interpret variation in attitude. Interpretations and implications must be viewed as suggestive and subject to such verification as the replication procedures employed in this study.

The most salient and, we think, interesting feature of attitudinal variation among ADI respondent groups is its association with differences in the nature and extent of their interaction with the deaf students. Administrators' contacts with the handicapped student population are, for the most part, indirect and occasional. Their primary function is policy-oriented, regulatory, and supervisory, focusing on the integration and coordination of broadly defined organizational and institutional objectives. Their more positive attitudes toward the deaf are consistent with the nature of both their contact with mainstreamed students and their occupational role. Interview data collected for a wide variety of purposes in the course of the mainstreaming project confirms the tendency for administrators to adopt a broader perspective on educational issues, including mainstreaming, than the persons they govern. Attitudes evoked in administrators by the deaf, being less influenced by individual interaction, may be a somewhat detached reflection of principles that, in the abstract, guide mainstreaming efforts.

Equally positive expressions of attitude were observed, on the other hand, for PPS staff, whose work involves direct contact with the handicapped that is more frequent and intense than administrators'. In fact it is through such contact, usually one-to-one, that their essential function, individual intervention and advocacy, is fulfilled. By training, if not by temperament as well, PPS staff are generally assumed and encouraged to possess and promote a benevolent view of their clientele.

Teachers and regular students, by contrast, are afforded neither the administrator's opportunity for philosophical detachment nor official reinforcement for cultivating positive personal regard for exceptional individuals in the school environment. They must interact daily with the mainstreamed student in the framework of the larger social context of shop or classroom. Within this context the social role of both teacher and student is traditionally defined by one's relation to the group rather than to individuals who comprise the group. The teacher's role is to instruct the class, and his relationship with individuals arises exclusively out of their membership in the class. The students' roles are characterized more by uniformity of status in relation both to the teacher and to one another than by individual differences among them. Notwithstanding a prevailing idealism favoring individualization in the classroom, there is little in the social structure of the classroom to induce a natural regard for the social anomaly, the exceptional person. For this reason, what is somewhat surprising is <u>not</u> that teachers and regular students display less favorable attitudes toward the deaf, but that, under the circumstances, they are as favorable as they seem. The continuous necessity of making special provisions for the adequacy of instruction for the mainstreamed students, the added effort required

of all in the room to effect his integration into even ordinary activities, and the absence of positive, extrinsic reinforcement for doing so would readily account for observed differences in attitude from administrators and PPS staff. The major burden of mainstreaming falls on teachers and regular students. Corroborative evidence from interviews with teachers and hearing students and from extensive observation of classroom interactions does, however, support ADI indications that attitudes in the classroom are generally more favorable than unfavorable.

Negative reaction to the handicapped students does exist in the mainstream environment, however. To identify its focus and extent more specifically, item analyses were conducted separately on hearing student and staff responses for each administration of the ADI. Response tendencies in <u>each</u> group were found to be highly consistent over time with respect to the items eliciting most unfavorable responses and with respect to the relative frequency of negative response. Moreover, <u>both</u> groups tended to produce the highest frequency of negative response to the same items. The only notable difference between students and professional staff was the students' generally higher frequency of unfavorable response. Very rarely, in fact, did students respond as favorably or more favorably to an item than the educators. It should also be noted that unfavorable responses elicited from both groups were overwhelmingly concentrated in the "mildly" unfavorable category. "Strongly" negative responses were relatively infrequent. For reporting purposes here, however, "mildly" and "strongly" negative reaction rates have been combined.

The content of many ADI items focused on impressions regarding the personal and social adjustment of the deaf. Both groups, in relatively

large numbers, are inclined to view the deaf as emotionally volatile, defensive, overly dependent, and insecure. Forty to 45% of the occupational education staff and 50% to 60% of the hearing students responded in this manner. Though unfavorable ratings were less frequent on other aspects of adjustment, 25% to 50% of the students and 10% to 25% of staff rate the behavior of deaf persons as bizarre, withdrawn, depressed, and obsequious. In addition, approximately one third of all respondents, staff and students alike, expressed some dissatisfaction with or reluctance about socializing with the deaf. Many also indicated that the presence of the deaf in their midst resulted in individual or group inconvenience. Difficulty created for the teacher was especially noteworthy. Almost 50% of staff were in "mild" agreement with the suggestion that the presence of the deaf was a hardship on instructors, and another 25% were in "strong" agreement. Finally, belief in the diminished intellectual capacity of deaf students is fairly common. It appears that about 35% of the students and 20% to 25% of the professional staff share the view that the abilities of the deaf are generally inferior to those of the hearing.

Three important facts emerge from the data regarding attitudes toward the deaf in the mainstream environment. To avoid misinterpretation and overemphasis of any particular facet of the evidence, it is important to consider each of these facts in relation to the others. Any of them, taken in isolation, could readily seem to support, rather emphatically, quite different biases or beliefs regarding the prevailing climate of opinion at the occupational training centers. It should be borne in mind, therefore, that they are not distinct and independent results, but three different approaches to summarizing precisely the same data.

First of all, we have observed that, on the average, attitudes expressed by various professional groups and by hearing students in the occupational training courses tend to be more favorable, and much more frequently favorable, than unfavorable. Second, although all groups surveyed in the study responded in a generally favorable way, they differed, nonetheless, in the degree of favorableness expressed toward the deaf. And finally, in spite of the fact that acceptance of the deaf may outweigh negative attitudes, substantial numbers of occupational educators and hearing students do express uncomplimentary judgments about the deaf. These findings suggest to the investigators the conclusion that the occupational education centers offer to handicapped students an attitudinal climate that can be, with discriminating choice of associates, both hospitable and conducive to mainstreaming goals. However, there also appears to be little basis for complacency regarding endorsement for the integration of handicapped students in regular courses of study. Though unfavorable sentiment may not prevent the success of carefully orchestrated integration efforts, it might nonetheless impede seriously the range of opportunities open to the deaf, contribute to weakening their interest and motivation, and diminish their satisfaction with the mainstreaming arrangement.

There is obviously no simple or infallible solution to the problem of negative bias, however slight or severe, toward handicapped students in the regular school setting. One strategy, found in all cooperating programs, is to protect deaf students by limiting their course options to reasonably receptive situations. There may be no other realistic alternative to the temporary use of this particular expedient, since it does at least enhance the possibility of rapid and effective development of mainstream opportunities

along lines of least resistance. As a permanently accepted basis for selective placement of students, however, it is highly unsatisfactory for two reasons. Accommodating capricious variation in staff and student adjustment to the handicapped limits artificially the school's mainstreaming capability. And even more importantly, if adopted as a policy regulating placement of the handicapped it circumvents a mainstreaming principle that has acquired the force of law--the child's right to educational due process and equality of educational opportunity.

It seems especially important, therefore, that affirmative action be undertaken to extend and sustain acceptance, not only in principle but in general practice, of the handicapped in regular school settings. It is particularly necessary to invoke such efforts with those on whom the greatest and most immediate demands are made. Much concern is expressed about the needs of the handicapped and about the importance of mainstreaming opportunities to their normal development. However, it must be recognized that the needs of others, both staff and students, also coexist in the mainstream environment. And the outlook for ameliorating negative attitudes would not seem optimistic, if the needs and convenience of some are perceived to be in competition with the interests of others.

Without wishing to be presumptuous, the authors believe that, where negative attitudes exist toward the disabled in the mainstream environment, they are not likely to improve spontaneously or by direct appeals, however valid, to principles, to conscience, or to legal rights. Such appeals connote the existence of an adversary situation, implying discrimination and guilt on one hand with injury and innocence on the other. Impressions gathered through extensive interview and observation in the course of the

project suggest that such considerations are related to attitude. This has been noted particularly with respect to differences, not elaborated upon in this report, among the participating programs.

It is not the purpose of this paper to detail unvalidated prescriptions or hypothetical solutions for altering negative attitudes or for reinforcing positive attitudes toward mainstreamed youngsters. However, our experiences have led us to the conclusion that reported lack or loss of individual support for mainstreaming efforts is associated in large measure with the perceived absence of positive incentives. Consideration might profitably be given to exploring locally practical possibilities of making explicit provision for such incentives. Appeal to incentives and reinforcers may seem to some to have the appearance of a crass, unprofessional appeal to selfish, personal interest. However, it might be well in this respect to recall the observation that the impact of mainstreaming is not conducive to philosophical detachment on the part of those most immediately and intensely affected by it. It is much less likely to be valued for its own sake than for tangible evidence of its value.

Depending on the circumstances, locally feasible and acceptable ways might be found to encourage belief in the importance of devoting energy to mainstreaming efforts. Examples of such inducements might include:

(1) Capitalizing on the personal support and influence of regular classroom teachers whose mainstreaming experience has been successful and satisfying;

(2) Visible support and public recognition of contributions to the achievement of mainstreamed students;

(3) Special work-load considerations that take into account the arduous demands of mainstream instruction;

(4) Increased access to special educational staff, support services, and other instructional resources;

(5) Provision of practical in-service experiences, particularly relevant to mainstreaming, which carry academic, certification, and/or salary credits;

(6) Guarantees of swift, individual, constructive, and unreproachful attention to difficulties encountered in the exercise of mainstreaming responsibilities;

(7) Promoting joint planning, shared responsibility, and mutually supportive delivery of instructional services by regular and special teachers.

These are ordinary things which might be attempted without extraordinary modification of existing arrangements. They refer, moreover, to staff incentives. In the classroom itself equally practical, teacher-initiated incentives might be devised to attract the active acceptance of regular students. While acceptance and support by both regular students and line staff may not directly account for mainstreaming success, it may well be a necessary condition for success. Our data on attrition seems to suggest the existence of a relationship between the favorableness of attitudes in various locations and the holding power of their mainstream programs.

Appendix A

In a preliminary study 50 educators, unconnected with the project, were asked to evaluate the degree of social acceptance or rejection implied by each statement in an original pool of 40 items. This procedure produced 12 pairs of reasonably well-matched items. One member of each pair was randomly assigned to one social distance scale, and its mate to the second scale. The order of items within the scales was randomized. The result was two sets of items, intended to represent alternate-form measures of a respondent's sensitivity to social involvement with the deaf.

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Table 1

Knowledge of Deafness Test (Fall, 1976): Means (M), standard deviations (S) and group size (N) of professional groups tested at four schools for the deaf and four BOCES occupational centers.

	Schools for the Deaf			Occupational Centers		
	M	S	N	M	S	N
Administrative/ Supervisory Staff	22.94	2.65	18	16.46	3.65	24
Pupil Personnel Services Staff	22.69	2.05	26	18.56	4.15	18
Instructional Staff						
-All	20.74	2.43	54	15.65	3.54	101
-Teaching Deaf in 1976	20.74	2.43	54	16.25	3.44	53
-Not Teaching Deaf in 1976	-----	----	--	15.00	3.57	48
All Staff	21.66	2.57	98	16.21	3.74	146

Table II

Knowledge of Deafness Test (Fall, 1977): Means (M), standard deviations (S) and group size (N) of professional groups tested at four schools for the deaf and four BOCES occupational centers.

	Schools for the Deaf			Occupational Centers		
	M	S	N	M	S	N
Administrative/ Supervisory Staff	24.86	1.46	7	14.70	3.16	10
Pupil Personnel Services Staff	22.40	4.77	10	20.30	5.19	10
Instructional Staff -All	22.29	2.07	24	15.54	3.99	50
-Teaching Deaf in 1977	22.29	2.07	24	15.35	2.92	23
-Not Teaching Deaf in 1977	-----	----	--	15.70	4.83	27
All Staff	22.76	2.97	41	16.10	4.38	70

Table III

Attributes of Deafness Inventory - Scale I: Means (M), standard deviations (S) and group size (N) of staff and student groups at four occupational education centers for the years 1976 and 1977.

	1976			1977		
	M	S	N	M	S	N
Administrative/ Supervisory Staff	41.29	8.08	24	42.08	11.75	13
Pupil Personnel Services Staff	42.64	7.51	14	41.89	7.46	18
Instructional Staff -Participant	44.46	9.83	37	48.47	10.21	38
-Nonparticipant	47.00	10.29	27	46.27	9.72	52
-Total*	46.30	9.95	99	46.30	9.99	138
Hearing Students	52.00	11.21	56	52.35	9.78	34

*Includes 35 teachers in 1976 and 48 teachers in 1977 who have had no past or present experience in teaching deaf students.

Table IV

Attributes of Deafness Inventory: - Scale I: Means (M), standard deviations (S), and group size (N) of staff and student groups at four occupational education centers for the years 1976 and 1977.

	1976			1977		
	M	S	N	M	S	N
Administrative/ Supervisory Staff	17.67	3.73	24	16.62	4.33	13
Pupil Personnel Services Staff	16.07	3.20	14	17.61	3.50	18
Instructional Staff -Participant	18.89	4.62	37	21.26	5.18	38
-Nonparticipant	19.54	4.24	26	20.46	4.95	50
-Total*	20.14	5.54	96	20.71	5.20	130
Hearing Students	20.34	5.21	67	19.26	5.04	34

*Includes 33 teachers in 1976 and 42 teachers in 1977 who have no past or present experience in teaching deaf students.

Table V

Rank difference correlation coefficients among distributions of BOCES group means (N = 5) on Scales I and II of the ADI (1976-1977) and Social Distance Scales I and II (1977).

	ADI Scale I		ADI Scale II		SD Scale I	SD Scale II
	1976	1977	1976	1977	1977	1977
ADI Scale I						
1976	1.00	.80	.90	.60	.60	.70
1977	.80	1.00	.90	.60	.90	.80
ADI Scale II						
1976	.90	.90	1.00	.50	.80	.60
1977	.60	.60	.50	1.00	.80	.80
SD Scale I						
1977	.60	.90	.80	.80	1.00	.90
SD Scale II						
1977	.70	.80	.60	.80	.90	1.00

Table VI

Pearson product-moment correlation coefficients among ADI Scales I and II (1976, 1977) and Social Distance (SD) Scales I and II (1977) for all staff respondents at four occupational education centers (N = number of cases).

	ADI Scale I		ADI Scale II		SD Scale I	SD Scale II
	1976	1977	1976	1977	1977	1977
ADI Scale I 1976	1.00	.65 (N=93)	.45 (N=92)	.51 (N=90)	.31 (N=94)	.32 (N=94)
1977	.65 (N=93)	1.00	.39 (N=91)	.64 (N=164)	.43 (N=171)	.45 (N=169)
ADI Scale II 1976	.45 (N=92)	.39 (N=91)	1.00	.66 (N=90)	.61 (N=92)	.57 (N=92)
1977	.51 (N=90)	.64 (N=164)	.66 (N=90)	1.00	.59 (N=163)	.56 (N=161)
SD Scale I 1977	.31 (N=94)	.43 (N=171)	.61 (N=92)	.59 (N=163)	1.00	.68 (N=171)
SD Scale II 1977	.32 (N=94)	.45 (N=169)	.57 (N=92)	.56 (N=161)	.68 (N=171)	1.00